THE

BOSTON MEDICAL AND SURGICAL JOURNAL.

VOL. LXXII. THURSDAY, MAY 11, 1865. No. 15.

PULMONARY TUBERCULOSIS.—A REVIEW.*

[Communicated for the Boston Medical and Surgical Journal.]

THERE is no living physician to whom the medical profession really owes more than it does to Dr. Horace Green, for the knowledge it now possesses of various diseases of the throat, previously too often neglected, but which now, thanks chiefly to Dr. Green, are successfully treated. We speak advisedly when we say that many coughs were formerly allowed to continue for years, sources of great mental and bodily distress, but which are now treated and speedily cured by topical remedies as recommended by Dr. Green. We do not mean that he was the first to make these local applications, but he was the first to enforce upon an unbelieving community the propriety of thoroughly examining and of treating by topical remedies all parts of the throat. Doubtless others before him had touched the vocal cords; but he has compelled us to believe that it was not only possible to touch them without the least trouble, but likewise that it is possible and at times useful to pass *through* them with a sponge probang filled with a strong solution of nitrate of silver. Even the possibility of thrusting the probang deep into the trachea is, we believe, now an accepted fact among most if not all of those who have examined the subject. We have all heard of "catheterism of the bronchi," and of the injection of fluids into the tubes. Many of us, however, doubt the propriety of it, compared with other apparently less dangerous means. We have all heard of its possible danger. And yet the present volume is really intended to urge this method upon the notice of the profession, and to claim for it the highest value—viz., as being a prominent means for curing consumption. In order to let our readers know, as clearly as we may, the amount

* A Practical Treatise on Pulmonary Tuberculosis; embracing its History, Pathology and Treatment. By HORACE GREEN, M.D., LL.D., late President and Emeritus Professor of the Theory and Practice of Medicine in the New York Medical College, Corresponding Fellow of the London Medical Society, &c. &c. New York: John Wiley. 1864.

of proof which Dr. G. gives us for this view of the subject, we propose to analyze the volume with some detail.

It confirms all Dr. Green has previously written upon the value of local treatment in all coughs arising from any throat complaint. In fact, while reading the greater portion of the latter half of the volume one is constantly reminded of the author's previous writings, and the object of the present work *seems* almost lost sight of. But if Dr. Green be right in his theory of the origin of tubercular consumption and in his new method of treatment, the last few pages far transcend in importance anything previously written by Dr. G. or by any one else upon the treatment of tuberculosis. If Dr. G. can sustain his propositions, we are on the eve of the greatest improvements in the therapeutics of this disease offered to us in modern times. For he claims that by his method we can frequently prevent tubercles developing in the lungs, and that even incipient phthisis is often amenable to treatment, and that physical signs, such as râles under the clavicles, &c., will disappear. These are high claims. They are possible, we have no doubt, for we are by no means among the sceptics who deny that tubercles can be cured. We have seen cavities cured, and we presume all auscultators have met with similar cases, and this without using any of the special remedies employed by Dr. Green.

With these prefatory remarks, we proceed to the promised analysis of the volume.

It is an octavo of 356 pages, 116 of which, or Part I., are taken up with an historical sketch of the opinions of the profession, from Hippocrates to the present time, upon the nature and treatment of pulmonary consumption. In this *résumé* Dr. Green has neglected to refer to all modern writers, such as Boudin, Mühry, &c., upon the geographical distribution of the disease, and yet this very cause —viz., locality—seems to be one of the most important in its etiology. The object Dr. Green had in view in making this sketch may be judged from the following remarks, page 117, at the commencement of Part II.:—"If now we institute a critical analysis of the views advocated by the different authors whose works we have been considering in the preceding pages, we shall find that much the greater part of them may in truth be regarded as humoro-pathologists, inasmuch as a majority of all the later writers on tubercular phthisis consider the disease as having its origin in a permanent dyscrasia, or a derangement in the constitution of the blood."

And page 118, Dr. G. writes:—"I propose to go back of all this, and to show that the blood itself is not the real and primary seat of the tuberculous dyscrasia."

To prove this, and the treatment naturally connected with it, is the object of the volume.

In order to prosecute the inquiry intelligently, Dr. Green feels compelled to go back to the "cells or elementary organs of animal

tissues," and he gives the cell theory and microscopic views of normal cells, and concludes with the following remark:—"If, then, histologists are enabled to trace all vital forces to the elementary organs, and to find independent life in each primordial cell, why may we not look for the first morphological change in diseased action, *in the individual cell, or even in the molecular contents of the cell itself?*" Dr. Green thus italicizes the part on which he is to rest his own theory.

Chapter II. contains histological inquiries into the structure of the oral cavity, larynx, trachea and lungs. He finds, among other things, many "glandules," "lymphatic vessels." The lungs, in fact, in their vesicles, correspond to the smallest lobules of "racemose glands." But the lymphatic vessels are very numerous in all these parts. Hence Dr. Green studies them and the lymph contained therein. But the "lymph, whilst it conveys certain substances from the tissues to the blood, brings along with it, at the same time, the corpuscular elements, out of which the blood-cells continually recruit their numbers." P. 143.

Dr. G. then refers to pathologists "who have regarded consumption as being in some way connected with changes in the quality of the fluid of the lymphatic vessels." And he quotes Virchow, apparently to prove his own (Dr. G.'s) particular views, as saying:—"If we compare the abnormal cells of the tubercle granules with some of the normal tissues of the body, we may observe the most complete correspondence between tubercle corpuscles and the corpuscles of the lymphatic glands."

Two remarks may be made upon the above quotations. Dr. Green quotes the opinions of all the physicians for centuries back as to what they *think;* but till they *prove* their propositions, their opinions have little weight in deciding the important discussions raised by Dr. G. In regard to Virchow, his grand idea is that he found nothing in disease that cannot be found, in a modified shape perhaps, in health. If Virchow's opinion be true, and the corpuscles of the lymphatic glands correspond entirely with tubercle corpuscles, and the form of a cell alones decides its malignant or non-malignant character, why are we not all tuberculous? They may correspond in aspect, but evidently there is *something* added, the *essential* qualities of which we cannot at present determine.

Chapter III. In this chapter the author endeavors to establish the following important theses:—

"*First,* That in most cases of chronic phthisis there are present *preliminary manifestations;* or, in other words, that *a primary pathological condition of certain portions of the tissue system exists,* which is sufficiently obvious to enable the practitioner to detect the approach of the disease it foreshadows, before the occurrence of any tuberculous deposit in the lungs.

"*Second,* That this inceptive pathological state, occurring in indi-

viduals having no hereditary taint, constitutes, ultimately, if persistent, the primary development of a scrofulous diathesis, which diathesis may thus become permanently established, and therefore be hereditarily transmitted to others.

"*Third*, That being early possessed of the knowledge referred to in the first proposition, *the physician has it in his power, by the employment of known therapeutical measures, to arrest, in many cases, the further progress of the morbid action*, and thereby to avert the fatal tendency of the disease.

"It is many years since the celebrated Abernethy published to the world his treatise 'On the Constitutional Origin of Local Disease.' His views have been pronounced enlightened and philosophical, and perhaps justly so. Certainly they were eminently suggestive, for they contributed more than those of any other writer of that period, to awaken among both surgeons and physicians a spirit of enlightened inquiry with regard to primary diseased action. But the time has arrived when the great work, needed by both branches of the profession more than that of any other, and which perhaps might be termed the converse of that of Mr. Abernethy, is one which shall embrace a full, enlightened, and philosophical history of the 'Local Origin of Constitutional Diseases.'"

Chapter IV. commences with the following, from Virchow:—

"Proposition I.—'As a continuous ingestion of injurious articles of food is capable of producing a permanently faulty composition of the blood, in like manner persistent disease in a definite organ is able to furnish the blood with a continual supply of morbid materials.'—Virchow."

Dr. Green then proceeds to say that "for fifteen years he has called the attention of the profession to the marked local morbid processes of certain tissues and organs, and to the chronic dyscrasia effected by their persistence."

"During several of the first years of my practice in this disease, I, in common with most modern pathologists, regarded tuberculosis strictly as a blood disorder, and phthisis as a local manifestation of such morbid condition of the blood. I still believe that this dyscrasic condition of the liquor sanguinis is present in consumption, after careful observations, made during many years of practice, in the treatment of many thousand cases of phthisis. I have had the conviction forced upon me, however, that the pathological change in the blood, which is characteristic of tuberculosis, does not have its origin in the liquor sanguinis itself, but that *the blood receives its contamination primarily from definite tissue elements, capable, from pre-existing local disease, of furnishing this fluid with a continual supply of morbid materials*; and of establishing, ultimately, that tubercular dyscrasia of the system denominated 'strumous diathesis,' or tuberculous constitution, or predisposition of the older pathologists."

He then alludes to the glandules in the tonsils, &c., of the throat, and declares that to them we are to look for the initial lesion in chronic tuberculosis (p. 152). This is Dr. Green's belief, but we

have as yet no proof of this being other than pure theory on his part. He then enters into a description of the changes that take place in the glandules; they become hypertrophied, "cloudy," and degenerated, and the follicles sometimes burst, but generally they discharge their contents upon the adjacent mucous membrane (page 156). Hence "diseased action is communicated from one follicle to another, until at length the glandulous structures, found studding the lining membrane of the larynx and trachea, are affected; and in many cases those even of the entire bronchial tubes become involved in the diseased action" (page 157). All this seems to us pure theory, for neither morbid anatomy nor clinical medicine convince us that the facts are as stated.

But on this hypothesis, for as yet we can call it nothing else, Dr. Green proceeds further and says (p. 157):—"If, under these circumstances, the patient has been born of phthisical parents, or if he possesses in any degree hereditary tendency to the affection, an acquired tendency thereto, or other favoring circumstances are present, tuberculous disease of the lungs is quite sure to be developed early." In certain other cases, viz., in those not predisposed to phthisis, only the strumous diathesis is found capable of transmitting phthisis.

On page 159, Dr. Green, as a matter of *proof*, says that, "having watched many cases," he is fully satisfied (but we are afraid he does not carry conviction to the reader) this is the way the tuberculous dyscrasia is developed in many persons and in families.

"It is in this way, we believe, that the process begins, and is perpetuated, by which the liquor sanguinis is furnished with a *continual supply of morbid materials*, and that dyscrasia is finally established which pathologists style the tuberculous constitution, or scrofulous diathesis—a dyscrasia, I repeat, not dependent upon a contamination originating in the blood, but one which, so far as this fluid is concerned, is secondary, and derived from definite points, in tissues or organs more or less remote."

Chapter V.—"Nature and progress of the tuberculous dyscrasia." It has its origin in the cellular elements of tissues (p. 162). As far as we can understand this Chapter, Dr. Green claims that, having this origin, the tuberculous dyscrasia is produced in two ways, viz., 1st, by any contamination of the blood by those morbid cellular elements conveyed by lymphatics or bloodvessels; 2d, by *contiguity*, if we may use the expression, as cancer gradually extends to glands adjacent to it. All this is stated as his belief; we see as yet no proof.

Chapter VI.—"Early symptoms of chronic phthisis, or tubercular dyscrasia." The steps of this morbid process are as follows. And here we have a repetition of what we have already given, that there is a "proliferation" or "disintegration" of cells from the nose, pharynx and tonsils; thence to the bronchi, and finally to the cells

of the lungs—the tubercular infiltration of Laennec. "There is also a chronic tuberculous dyscrasia of the blood" caused by this long supply of morbid material.

Dr. Green then gives the usual "earliest symptoms of tubercular phthisis, and because cough, &c., without any or but trivial physical signs, exists, Dr. G. assures us they are signs *almost* precisely what we generally find to be present in the forming stages of the follicular degeneration." We presume he wishes us to take these two conditions as one and the same; but our experience does not agree with his. In a vast majority of cases the physician, when consulted, will be able to distinguish the two. In our own experience, the types of the two diseases, viz., those of merely throat disease and those of tuberculosis, though difficult of description and not called for in our present discussion, are usually sufficiently clear. We cannot, therefore, follow Dr. G. in the inferences to which he would lead us in the following, although we may agree with him in his general statement of symptoms. Because one fact in medicine is obscure there is no reason for attaching by pure theory alone another obscure fact upon it, and thereupon building up a system of heroic treatment.

"I have referred to these early symptoms of chronic phthisis—admitted to be such by most pathologists—for the purpose of showing that they are almost precisely those that we generally find to be present in the forming stage of that follicular degeneration of which we are treating. All our best and most experienced writers on the symptomatology of consumption, therefore, are agreed in this, that the approach of this fearful malady is often so silent and insidious that the detection of the disease, in its forming stage, is frequently attended with the greatest difficulty, whilst there is no other in which early detection is of more importance. But we have declared, in our first proposition, that in most cases of chronic phthisis there are present preliminary manifestations which are sufficiently obvious to enable the practitioner to detect the approach of this disease *before* the occurrence of any tubercular deposit in the parenchyma of the lung; and consequently to enable him, in a large proportion of cases, to avert the deplorable result."

Chapter VII.—"Primary symptoms of tuberculosis." Dr. G., in this chapter, again states boldly his views:—

"In my work on 'Diseases of the Air-Passages,' under the head of Follicular Disease of the Pharyngo-Laryngeal Membrane, I have described briefly the primary symptoms which mark the commencement of deterioration in cellular elements of tissues and organs, the ultimate tendency of which is to establish, in the way which has been pointed out, the tubercular dyscrasia in the fluids of the system, and a deposit of a tubercular character in the lungs.

"This peculiar affection *invariably* commences in the glandulæ of the superior portion of the aerial membrane. In the nearly ten thousand cases which in the last twenty-five or thirty years have come under my notice, I have observed not a single instance in which the

evidences, if not in favor of, were against this declaration. With emphasis, then, would I repeat to the profession the assertion I have made, that the primary manifestation of this abnormity is not only sufficiently obvious to enable the practitioner to recognize its presence, but that the malady, in this its initial stage, is, in a large proportion of cases, positively amenable to appropriate therapeutic measures."

He also states the curious fact, that always the tonsil most diseased marks the lung that is most disorganized.

Our experience is not so extensive as that of our author, but if there be two facts of which, as it seems to us, we are equally convinced as Dr. G. is of his own views, they are these, viz., that very often signs of disease of the lungs themselves commence long before *any* symptoms of trouble in the throat occur; 2d, and still more certain are we that hoarseness, that specific sign of laryngeal disease, almost invariably *follows* and does not *precede* lung trouble.

Chapter VIII.—"Second stage. Ulcerations of the trachea, larynx, &c." There is nothing peculiar in this Chapter.

Chapter IX.—"Third, or tubercular stage." Dr. Green quotes Lawson as sustaining his views (p. 196), who says:—"It has occurred to me so frequently to observe the fact that all the precursory signs of impending consumption have been modified or removed by remedies applied to the throat, that I can no longer resist the conclusion, that the lesion in question is, in a certain class of cases, closely allied to local pulmonary disease."

Dr. Gibb is also quoted by Dr. Green. He and Dr. Lawson, and in fact every well-educated physician who has had any practice, has noticed the frequent alliance of throat trouble with pulmonary, and their mutual influence, but this is very different from agreeing with Dr. Green's views in regard to the special pathology of consumption. And to this end we feel obliged to arrive; for these two parts, occupying two hundred pages of the volume, have not presented to us any *positive proof* of the truth of Dr. Green's theory. We must confess that we would have preferred an exact record of fifty or a hundred cases of manifestly tuberculous disease, with physical signs given in detail, and the results of Dr. Green's mode of treatment. These would have been worth more than all the mere opinions of physicians from Hippocrates down to the present hour, or any illustration of the cell theory, and general arguments as to what ought to be. This is what Dr. G. thus far has not given us. We confess to a disappointment. But let us turn to Part III., and see if we cannot there obtain more light and more proof.

Part III. Chapter I.—"Treatment of the præ-tubercular stage of phthisis." We do not object, but many will, to the term "præ-tuberculosis," the objectors claiming that no case can be considered tubercular till tubercles are manifested by physical signs. In terms we should agree with Dr. Green, and must confess that we feel as confident as he is of saving life by treatment in this stage, only we

do not depend on Dr. G.'s special method as the *sine-qua-non* course necessary for a cure. Nay, more—our experience leads us to believe that in many cases no amount of local treatment of the throat will, at times, check a manifestly tubercular tending case, even when for months there is no evidence from physical signs of pulmonary disease.

Section I. is simply a statement that Dr. Green has quoted these authors "to show that there is present, among experienced and observant pathologists, a growing conviction that a most important connection exists not only between a morbid condition of the glandular structures 'of different portions of the mucous membranes of the air-passages and a tubercular dyscrasia,' but also between that morbid change to which we have alluded, in epithelial cells in the air-vesicles, and the repletion of these vesicles with *tubercle corpuscles.*"—(P. 201.) This statement is true, but nevertheless it seems to us it does not necessarily follow that these writers sustain Dr. Green in his peculiar view of the development of phthisis. We are not aware that any one of them agrees with our author.

Section II.—It is occupied with the history of one family having no hereditary tendency to tuberculosis. The mother, however, died at 82, after having had for years chronic catarrh in the nose and pharynx. Neither parents showed signs of tubercular disease. All the eight children showed "catarrhal irritation"; four (not five, as Dr. G. states in one part, but in his detail only shows 4) died of consumption, at the ages of 69, 58, 39 and 31. Of the others, two died of other diseases; one is still alive, having been the only one treated according to Dr. G.'s method. But Dr. G. "maintains" *if* the same treatment *had been pursued* in them their lives would "in all probability have been saved or prolonged"; but, unfortunately, he did not at that time know of the value of topical remedies. We beg pardon of Dr. Green, but his assertion of an opinion is no proof of a fact. The next generation showed the gravest results. The five (four?) children who died of tuberculosis had twenty-one children, fourteen of whom had "strumous constitutions," and nine of the fourteen died of tubercular disease in early life; the other five have unmistakable symptoms of scrofula. This account contains the gist of Dr. G.'s views. The grandmother has catarrh; hence her children have a strumous diathesis, and die late in life of consumption; the grandchildren are cut down more quickly of true consumption or scrofula. Dr. Green adds, that from his "book of recorded cases he could give a very large number of well-attested cases," but it is not his intention to cumber his work with "cases" only so far as to prove and illustrate the propositions he will announce. "Every physician of experience can recal cases, in his own practice, confirmatory of the views here adduced *with regard to the source and progress of the tuberculous dyscrasia* [Dr. Green's italics]; cases, we mean, where individuals have labored under the symptoms of *threat-*

ened phthisis, perhaps through many years, and whose children have died of consumption, and who themselves, after ten, fifteen, or even twenty years, have fallen at length victims to fully developed tubercular phthisis."

This has, of course, ever been the unqualified admission of the profession; but what does it prove for Dr. Green's peculiar views? Another defect is observable in his record of this family. Dr. Green does not let us know anything about the habits, professions, residences, &c., of the various members of the family thus quoted; much less has he told us anything about these matters in the "many other well-attested cases." Yet how much these facts, and many others that might be named, go towards the production of tubercular disease! We regret extremely that the reader will have to look in vain for these very "cases." When one proposes to modify and perhaps upset all the views of pathologists, abundant proof by a report of such well-recorded observations is absolutely necessary; otherwise the stubborn-fact men immediately begin to doubt the truth of even a well-constructed and perhaps true theory. Dr. Green, by neglecting this consideration, has placed his work thus far simply on the level of pure theory.

Chapter II.—Here we have the treatment given of lesions of the fossæ nasales, tonsillar glands, pyriform sinuses, epiglottis, larynx and trachea, including all the various affections generally treated upon by Dr. Green in his previous works. There are many valuable suggestions in these seventy-four pages. Dr. Green claims that all the various lesions named are only the primary lesions of the præ-tubercular stage of chronic phthisis. He gives 26 cases:—2 of disease of the fossæ nasales; 2 of the uvula; 7 of the tonsils; 2 of the pyriform sinuses; 6 of erosion of glottis; 7 of ulceration of mucous membrane, or of the glands of the epiglottis, œdematous condition.

Now we presume there is not a single physician in the land who will deny that all these lesions can often be relieved by local remedies, chiefly suggested by Dr. Green. Not a day passes that we do not thank that gentleman for the advantages we have gained from his precepts in all such. But if we appeal to his cases and analyze them, so as to learn their real bearing upon tubercular development, we find that of the twenty-six only four presented positive signs—crackling, &c., under the clavicles. In three the signs disappeared, but in one of these he is not sure of a perfect cure. In the fourth, a dulness about the clavicle still remains. But all were much improved. These physical signs disappeared after months of treatment, local and general, of the most active kind, including change of air in three of them.

Dr. Green remarks:—

"We are quite aware of the importance of not deciding too hastily, with regard to the permanent arrestment of disease, in cases in

which tuberculosis has been positively detected. But in the treatment of so large a number of instances, now amounting to many hundreds, in which positive indications, both physical and rational, have been diagnosticated, not only by myself, but also by experienced auscultators—cases which have for years since being treated, enjoyed perfect health, I do not hesitate to declare my firm conviction that, in many of these cases of incipient tuberculosis, dependent originally upon cellular degeneration, positive and permanent cures have been effected by the treatment I advocate. * * * *

"I could enumerate many hundreds of cases, which during the last twelve or fifteen years have been treated in a way to arrest the epithelial degeneration that originates in the cellular elements of the superior portion of the air-passages; and have thereby succeeded in preventing the full development of a general pathological dyscrasia—one that is sure to end in confirmed phthisis."

We frankly confess that such general assertions are insufficient in so important a discussion. We need very minutely examined and recorded cases, and a proof by such records, that Dr. Green succeeds in curing more than others by this method. All of us have seen physical signs disappear, and probably in thousands they have disappeared within the last fifty years, without any such local treatment. And the question really to be proved by Dr. Green is, that he saves more lives, or throws back the physical signs of tubercular disease of the lungs oftener, than others. A painful state of doubt remains, we must confess, upon this matter. Dr. Green deals a great deal with medical opinion and medical theory; but, we repeat, we want something more convincing than mere opinion, even of the ablest.

[To be continued.]

TWO CASES OF TÆNIA SOLIUM.

By Francis C. Ropes, A. A. Surgeon U. S. Army.

[Communicated for the Boston Medical and Surgical Journal.]

Case I.—H. R. W., a gentleman about 50 years of age, living near London, England, began to be troubled, in April, 1864, with diarrhœa, and griping pains in the abdomen; which were most severe after fasting. He soon noticed that portions of a worm were passed at stool, and also crawled out of the anus at other times, and were found adhering to the skin, clothes, &c. He consulted his regular medical attendant, who considered the case one of tænia, but was surprised that the portions of worm should have an independent vitality. It should be stated here that the separate joints, when kept in water in a phial, were found alive after 24 hours or more. It appears that this medical man showed a specimen of these joints, still alive, to one or two well-known London physicians, and that they had never before observed this condition. Patient was ordered about ℥ xv. of the oil of male fern, and passed in consequence about four feet of tænia. He was much relieved; but the symptoms re-

turned after a few weeks. In June, I was requested to see him. Having learned the history of the case, I prescribed ʒ ss. of the oil of male fern after fasting, followed by ʒ i. of castor oil. A portion of worm was expelled (I forget the exact length), with some relief to the symptoms. However, as no *cure* had been effected, I prescribed in a day or two, ʒ ss. more of the oil. At this time, I think, too great an interval (about 5 hours) was allowed to elapse between the administration of the anthelmintic and the cathartic; for only a few small portions of worm were passed, and, moreover, patient suffered considerably from headache and lassitude—due, possibly, to the failure of the castor oil to remove the oil of fern from the system. A few days having been allowed for the patient to recover from the effect of medicine, he was ordered, on June 16, to take no food whatever, after a light dinner, till further orders; and on June 17, at 5, A.M., ℞. Olei filicis maris, ♏xlv.; mucilaginis acaciæ, aquæ, aa ʒ i. M.; and at 6½, A.M., ℞. Olei ricini, ʒ i. In the course of the forenoon, patient had two stools, in which were found about 32 feet of tænia; and, after a careful search, the *head*, of which I made a microscopical preparation.

I saw this patient about three months afterwards, and he had then had no return of his malady. I may here state that this gentleman was not in the habit of eating pork, but was fond of rabbits, which are largely eaten in England.

Case II.—George B. Mead, about 25 years of age, private, Co. M, 3d Mass. Cavalry, was admitted into the U. S. General Hospital at Readville, Mass., on Feb. 22, 1865; having frequently passed portions of tape-worm during the previous four months, of which he showed me a specimen on admission. He had suffered from griping abdominal pains. He had been treated, not long before entrance, by a medical man, and passed about four feet of worm.

Feb. 23.—Ordered to take no food after to-day noon till further orders. Feb. 24, at 6, A.M., ℞. Olei filicis maris, ʒ i.; mucilaginis acaciæ, ʒ i. M.; and at 7½ A.M., ℞. Olei ricini, ʒ i. Had two stools in the course of the morning, in which were found about 25 feet of tænia, and after a careful and prolonged search, the *head*, which I have also preserved. Patient was considered cured; and at his request was returned in the afternoon to his company at Camp Meigs. I am disposed to consider the oil of male fern the most sure anthelmintic which we possess, in cases of tænia. I find, in looking over the works of a few well-known European authorities, that this has been by far more successful in their practice than anything else. I believe, however, that failure may occur, owing to want of attention to the best mode of administering the remedy, which should be given after about fifteen or twenty hours' fasting, and followed, in an hour or two, by a cathartic. Of course it is a great satisfaction to find the head; but this may readily escape notice, in consequence of its minuteness.

U. S. Gen. Hospital, Readville, Mass.

THE THERAPEUTIC AND PHYSIOLOGICAL ACTION OF DIGITALIS.

By William Murray, M.D., M.R.C.P. Lond., Physician to the Dispensary, and Lecturer on Physiology, &c., Newcastle-on-Tyne.

Few drugs have been the subject of more conflicting statements than digitalis, and yet there are none on whose action the Profession has more implicitly relied. The drug has a special action on three separate organs—the brain, the kidneys, and the heart; in proof of this, witness its decided action in delirium tremens, in dropsy, and in various forms of heart disease.

As the action of the medicine upon this latter organ seems to have been little understood, and is still scarcely established, although the observations of Dr. Handfield Jones and others have been well put forth, it therefore seems right to add any new facts or observations on the subject.

I have carefully observed from twenty to thirty cases of cardiac disease treated by digitalis, from which the following conclusions have been drawn; some of these will be quoted as very decided cases, showing the true action of the medicine. As the proposed explanation of the action of digitalis accords fully with the ingenious and well-supported theory put forth by Dr. Anstie in his work on "Stimulants and Narcotics," it may be well to say that he holds that all true stimulants tend to bring tissue action to its normal standard; that when such action is in excess a true stimulant will reduce it, and when below par will bring it to its proper level; he proposes "that the word stimulant be restricted to agents which, by their direct action, tend to rectify some deficient or too redundant natural action or tendency." I believe that the action of digitalis when properly investigated will confirm these views; and at the same time the investigation of its action will be materially assisted by bearing them in mind. I shall show—

1st. That digitalis will stimulate and strengthen a weak heart, and that the weaker the muscular tissue of the heart the safer will be the administration of the medicine.

2d. That in a hypertrophied heart it will fail to reduce the pulse either in frequency or strength, and in such cases will prove dangerous.

3d. That in a weak organ, acting because of its weakness with great rapidity, it will reduce the number of its contractions, and, as it were, strengthen or tone them down. To strengthen and quicken the action of a weak, slowly-acting heart, and to reduce the number of the rapid strokes of a feeble heart is, according to Dr. Anstie, to do the work of a true stimulant, bringing action up to the normal standard on the one hand, and reducing it to that level on the other.

I. The following case is one of many in which the remedy has removed irregularity and intermission of the pulse, has given power to the heart when exceedingly weak, and increased the rapidity of its action.

A lady, aged 50, had suffered for nine years from cardiac disease, and was in an extremity of suffering when I first saw her, having a very largely dilated and weak heart whose cavities were overladen with blood, and considerable disease of both aortic and mitral valves. A confused tumbling and heaving impulse was all that could be felt in the cardiac region, and feeble blowing murmurs supplanted the natural sounds of the organ. There was no pulse at the wrist, and the large vessels in the limbs had scarcely a pulsation in them.

A dropsy of the legs and belly was making fast progress, and the usual stimulants and diuretics had failed to give relief. Although thus pulseless and faint, with the heart in so weak and burthened a condition, I prescribed digitalis in doses of ten drops and upwards. In a day or two the organ began to beat more forcibly, the pulse came again at the wrist, the turbulent or confused action became replaced by a quiet, steady stroke, the breathing, before labored, became easy, and the dropsy began to disappear. In a week the patient was out of bed, and very shortly she so far recovered as to go about in her usual way. After this she lived for more than a year in comparative comfort and good health, when suddenly the organ again failed, and before digitalis could be administered she died.

I might add to this cases of aortic regurgitation, with dropsy; many cases in which both aortic and mitral orifices were diseased, with dilatation of the walls of the heart and a weak, irregular pulse at the wrist; cases of simple weakness of the organ, without appreciable disease; cases of dyspnœa from an emphysematous state of the lungs and sluggish pulmonary circulation—all of which were most decidedly benefited by digitalis. I would especially direct the attention of the profession to the use of the drug in cases of bronchitis depending on sluggish circulation, with weakness of the heart's action and emphysema of the lung.

I have alternated the use of digitalis with the strongest of our stimulants in some of these cases, and have been astonished at the superiority it possesses as a stimulant. From the observation of a few cases in which the drug has been given continuously for a lengthened period, I do not find anything like failure of the heart's action to occur under a month or six weeks, and then a few days of intermission will clear the way for a fresh course of the medicine. In dyspnœa the relief obtained is sometimes most marked. I remember a poor girl, with frightful disease of the mitral orifice, having to rest on almost every doorstep on her way to my house, who was so relieved by digitalis as to walk to and fro with ease. I do not think, after trying it in almost all the affections of the heart, that there is a single disease or condition of that organ *attended by weakness* in which it may not be given with safety and benefit.

II. The next condition to which I would refer is that of hypertrophy. In this my experience is not large; but in one uncompli-

cated case of hypertrophy of the left ventricle, without valvular disease, in a man who had an almost Herculean frame, digitalis was fairly and carefully tried. The heart's action in this case was rapid and at the same time very forcible; the digitalis not only failed to reduce this, but it caused an increase in the symptoms, and the patient almost fainted after trying it for one week, so that the medicine had to be changed to tinct. verat. virid., from which decided benefit was derived. I might say that a converse experiment was tried in a boy, with mitral disease and rapid action of the heart. Here tinct. veratr. virid. failed to give the relief which was most effectually derived from digitalis.

III. Lastly, as a cardiac stimulant, digitalis ought to reduce too great rapidity of action *when this depends on weakness.* In this respect the drug has been well tried, and almost universal testimony to its value has been given.

In inflammatory diseases, in fevers, in phthisis, it is acknowledged to reduce the rapid pulse. In one case of phthisis at present under my care, it does this, and most materially lowers the temperature of the body and relieves the daily hectic paroxysm. While, however, it checks the excessive rapidity of the heart's action, it does not, therefore, weaken its force; so that, as a true stimulant, it brings the organ down to a slower rate of action, but at the same time affords it more power to do its work.

Thus it appears that the *physiological* action of digitalis is that of a stimulant, in Dr. Anstie's sense of that term; and that in its *therapeutic* properties it is especially useful in cardiac weakness, whether that weakness be accompanied by extremely slow or extremely rapid action. Further, its physiological action as a stimulant may be explained by supposing that in the case of the slow heart it improves the molecular arrangement of the sarcous elements, or that it excites the nerve centres from which the nervous power of the heart is derived; and in the case of the weak but rapid heart, it acts by strengthening that regulating or restraining (vital) influence which, while maintaining the activity of the tissues at a normal rate, checks undue and riotous action in the same (Radcliffe). Lastly, let me say that as a diuretic it is at once the safest and best we possess, and the dose may vary from ten drops to half an ounce. This very day I have given nearly half an ounce in fifteen-drop doses every two hours to a child three years old, and by so doing have subdued a rapidly-developing general dropsy, which was threatening the little sufferer's life.

P. S.—In some cases of mitral regurgitation, accompanied by a loud, distinct murmur, I have felt satisfied that digitalis reduced the intensity of the murmur most decidedly, and in one case it seemed to disappear altogether.—*London Medical Times and Gazette.*

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURSDAY, MAY 11, 1865.

The American Medical Association.—The sixth of June, the day appointed for the meeting of the National Association in Boston, is fast approaching, and all things now seem to combine to make the occasion one of unusual interest and complete success. The doubts which partly occupied the minds of some of us, as to the practicability of holding the meeting this year, while the storm of war still hung over the country, are dissipated in this new sunshine of peace, and our thoughts, no longer distracted by anxiety, can after four long years be again and for the first time wholly given to a consideration of our professional interests. Those who have so nobly represented us in the field, and who have not failed to sustain equally with our brave and victorious soldiers our national glory, are now returning, prepared to lay before us at that time the fresh results of their long labors, and it would be a lasting reproach to us did not the profession throughout the country make this the occasion of publicly expressing our appreciation of their services, and of giving them such a welcome back to our ranks as we know awaits the reception of the rest of our gallant army to its homes. To those, also, who were once so gladly met in these meetings, and who have as devotedly sacrificed themselves in the cause for which their people have so vainly fought, we extend, in the name of our national association and our common interests in science, a cordial invitation.

The committees, to which have been entrusted the preparations for the reception and entertainment of our guests, have nearly matured their plans, and have met with the most ready coöperation from State and city authorities and from all parties with whom they have communicated. The members of our profession will without doubt show the same willing spirit to assist the finance committee in its work when called upon, as we learn they will be during the coming week. From the entire unanimity in the profession, and the reputation which Boston possesses as a centre of scientific and educational interests, there can be no doubt as to the nature of the reception or the attractive character of the entertainment which this city will give the Association. There is, indeed, but a single suggestion which we can offer to the committee, and this has, perhaps, been already anticipated; it is that invitations should be sent to the whole medical staff of the army, through the proper channels, to be present. It remains now for the various societies and institutions of the country, through their delegates, and for the chairmen of the scientific committees, to give to the coming meeting its true character, and we trust that all, far and near, will do their utmost to make it, as it promises to be, the most important one in the history of the Association.

On Extract of Meat. By Prof. Von Liebig.—Since my investigations upon meat in the year 1847 (see these "Annals," lxii.), I have constantly endeavored to promote the fabrication of extract of meat

according to the method described by me, in countries where beef is cheaper than it is with us.

Since the introduction of this extract of meat (which is not to be confounded with the so-called consommé or soup-tablets) into the Bavarian Pharmacopœia, its great efficacy in cases of disturbed nutrition, of impaired digestion, and of debility, has been practically confirmed, and it will perhaps suffice to give an idea of the extensive use made of the extract of meat as a remedy, to mention that in the court-pharmacy here nearly 5000 pounds weight of beef are annually employed for this object. It may be worthy of remark that a great part of this extract of meat in the Bavarian pharmacies is sold by retail—that is, without a physician's prescription—an indubitable proof that it has become a domestic remedy, to which those persons who have experienced its beneficial effects in the form of medicine resort spontaneously in similar derangements of health; these are often very poor people, who are least inclined to spend money upon medicine, and whom the high price of this remedy (1 fl. 12 kr. per oz.) does not deter.

In the hospitals and infirmaries, in which it is well known that the good soup prepared there is only too often confiscated by the nurses and attendants, the prescribing physician will, by means of the extract of meat, be able to give his patients a soup, quite free from fat, and of any strength he may desire.

Parmentier and Proust have for many years most strongly recommended the extract of meat for use in the French army. "In the train of a regiment," says Parmentier, "the extract of meat supplies the severely wounded soldier with a remedy which, with a little wine, immediately restores his strength, enfeebled by great loss of blood, and places him in a position to bear being transported to the nearest camp-hospital."

"No more happy application," says Proust, "can be imagined. What more strengthening remedy, what more powerful panacea, than a dose of the genuine extract of meat dissolved in a glass of generous wine! The elaborate tit-bits of gastronomy are all for the spoiled children of wealth! Should we, then, have nothing in our field-hospitals for the unfortunate whom his destiny condemns to suffer for us a long death-struggle in the snow and mire of marshes?"

A pound of extract of meat is sufficient, when boiled with slices of bread, potatoes, and some salt, to afford a meat soup for 128 soldiers, such as is not to be had of equal strength in the best hotels. Coffee and tea, although invaluable in themselves, are in the end to be considered as only imperfect substitutes for the extract of meat. In fortresses and in the navy, where the men are thrown upon salt and smoked meat, the extract is the only means of supplying the important constituents which are removed from the meat in the process of salting, and of restoring to it the complete nutritive power of fresh meat; in like manner the employment of the extract of meat would be of the highest importance to travellers, and particularly to families in the country as well as in towns, especially in Germany, where soups are indispensable; in Germany meat would be eaten in very much greater plenty and better dressed, and the soup would be prepared from the extract, if the high price of the latter did not present a difficulty which with us is almost insuperable. * * * * * *

The following is Prof. Liebig's process for the preparation of the extract referred to at the beginning of this article :—

"From the above-described behavior, the best process for preparing, in the short space of a few minutes, the strongest and most aromatic soup, is at once evident, and any one can, by the simplest experiments, satisfy himself of the truth of Proust's statement, that the constituents of the soup, on which its taste and its other properties depend, exist ready formed in the meat, and are by no means the product of cooking.

"If one pound of lean beef, free from fat and bone, finely chopped as when used in sausages, be equally mixed with its own weight of cold water and slowly heated to the boiling point, the fluid being then, after boiling for some minutes, separated by expression through a napkin, from the coagulated albumen and from the fibrin which has become hard and horny, we obtain an equal weight of the most aromatic broth, such as cannot be obtained even by boiling for hours from a piece of meat. Mixed with some salt and the other adjuncts with which soup is seasoned, and colored somewhat darker with roasted onions or burnt sugar, this broth furnishes the best soup which can be prepared from a pound of meat. The influence which the (brownish) color of the soup exercises on the taste, in consequence of the ideas connected with the color, is easily proved. Soup colored with a little caramel (roasted sugar) has, in the opinion of all persons, a much stronger taste than the same soup when not colored, although the caramel, in fact, in no way enhances the taste.

"If we allow the meat to boil longer with the water, or evaporate the broth at a boiling temperature, it spontaneously acquires on concentration a brownish color and a delicate taste of roast meat. If we evaporate it to dryness in a water-bath, or, if possible, at a still lower temperature, we obtain a dark-brown, soft mass, of which half an ounce is sufficient to convert a pound of water, to which a little salt is added, into a strong and palatable soup.

"This extract of meat is not to be classed with the so-called soup or broth tablets prepared in England and France, for the latter are not made of meat, but consist of gelatin in a state of greater or less purity, which is distinguished from bone-glue only by its high price.

"From thirty-two pounds of lean beef, free from bone and fat (consisting of eight pounds of dry meat and twenty-four pounds of water), we obtain one pound of this extract, which, on account of its high price, can scarcely become an object of trade ; but if the experience of military surgeons agrees with that of Parmentier, according to which the 'dry extract of meat in the train of a corps, supplies the severely wounded soldier with a restorative, which, with a little wine, immediately raises his strength exhausted by great loss of blood, and enables him to bear being transported to the nearest hospital,'* it seems to me to be a pure matter of conscience to recommend Parmentier's and Proust's proposal to the attention of governments.

"Now, if the composition of this extract be somewhat more precisely known, any skilful apothecary can easily distinguish the genuine from the false preparation. Of the true extract of meat nearly 80 per cent. dissolve in spirit of wine 85 per cent., while rarely more

* See Proust, Annales de Chimie et Physique, 3d series, t. xviii., p. 177.

than from 4 to 5 per cent. of the ordinary soup tablets are dissolved by the same fluid. The amount of creatin and creatinin, which latter is immediately recognized in the spirituous solution by means of chloride of zinc, and the nature of the salts remaining after incineration, consisting principally of soluble phosphates, furnish sufficient resting points for estimating the goodness of the genuine extract.

"I consider this extract to be not less important for provisioning ships and fortresses, to preserve the health of the men in those cases where there is a want of fresh meat and vegetables, and where the men are dependent on salt meat.

"It is generally known that in salting meat the latter is rubbed and sprinkled with common salt, and that in the points where the meat and salt come in contact, a brine is formed, amounting to a third or to half of the fluid which formed a constituent of the fresh meat.

"I have found that this brine contains the principal constituents of a concentrated soup, that, therefore, in salting, the composition of the meat is altered, and in a still greater degree than occurs in cooking. In cooking, the highly nutritious albumen remains in a coagulated state in the meat, but in salting, albumen separates from the meat; from the brine when heated to the boiling point a quantity of albumen separates as a coagulum. The brine has an acid reaction; it gives, with ammonia, on the addition of a salt of magnesia, copious precipitate of ammoniaco-magnesian phosphate; it contains lactic acid, a large quantity of potash; and that it contains creatin, which I was unable to separate from the great excess of common salt, may be undoubtedly inferred from the amount of creatinin present. Thus, the brine neutralized with lime yields, after the crystallization of the common salt, a ley, from which, after some time, on the addition of alcohol and then of chloride of zinc, the double salt of creatinin, which I have already frequently mentioned, is deposited.

"Hence, it is quite clear that in salting meat, if the latter be rubbed so much that a brine is formed, a number of matters are withdrawn by the separation of the fluid of meat which are necessary to its constitution, and that in proportion to this loss its nutritive properties are impaired; if these constituents are not replaced from other sources, it is evident that a portion of the meat becomes a respiratory matter certainly not conducive to health. It is further certain that by salted meat, if its quantity be not increased, the health of an individual cannot be permanently maintained, inasmuch as by its constituents, the parts of the body removed in the metamorphosis of tissue are not fully replaced, and the fluid diffused through the whole body (fluid of meat) is not kept in its normal composition. A change in the nature of the gastric juice, and consequently in that of the products of digestion, must be looked upon as a result of the long-continued use of salt meat; and if, during digestion, the matters which are indispensable to its progress are taken from other parts of the body, the latter must lose their normal condition."—Translated from the *Annalen der Chimie und Pharmacie* for January, 1865, by William Daniel Moore, M.D. Dub., in *Dublin Medical Press*.

Sad Anachronism in Medical Education.—It is often stated that when the notorious surgical teacher, Paracelsus, wished to show his

aversion to any particular author, he immolated the writings he dissented from in the presence of his pupils. We are not aware that this mediæval practice has ever been adopted in any of our Scottish universities till last week, when it was followed out in one of the class-rooms of the University of Edinburgh. It looks like a plunge backward into the dark ages. The occasion was as follows:—Prof. Simpson has discovered a new method of arresting the bleeding in surgical wounds and operations by temporarily compressing together the sides or tubes of the divided vessels by a needle, instead of tying up their open mouths by threads, which remain for days as foreign bodies in the wound, and always kill or mortify the end of the tied artery. Dr. Simpson's new and simple plan of acupressure has been accepted with much more favor by the profession than new practical suggestions usually are. But Mr. Syme, Professor of Clinical Surgery, without ever trying the plan, denounced it some time ago in most discourteous terms before the Medico-Chirurgical Society of London. Lately, Dr. Simpson issued a quiet pamphlet styled "Answers to the various Objections against Acupressure, or the temporary Metallic Compression of Arteries, adduced by Professors Miller, Erichsen, Neudöfer, Spence, Fergusson and Syme." Last week Mr. Syme took this pamphlet into his class-room, and, without attempting to answer the rather unanswerable arguments which it contains in favor of acupressure, he scolded at the author, and declared the pamphlet to be a piece of "vulgar insolence." "Then came the denouement" (we quote from the letter of an accurate eye-witness). "With firm hand, teeth compressed, pale lines around his orbits, and altogether a most determined and savage expression, he tore up the pamphlet with his fingers, and gave the fragments to his assistants to be consigned to the sawdust box with other surgical remains." One important addition requires to be made to our notice of this indecent scene. The whole had given to it a kind of official character by Dr. John Brown, the assessor or representative of the Lord Rector in the University Court, accompanying Mr. Syme into his class-room on this special occasion, countenancing by his presence and patronage Mr. Syme's proceedings. We do not stop to discuss the question whether, by aiding in this unseemly exhibition, Dr. Brown did or did not dishonor the important trust confided to him by Mr. Gladstone. The whole transaction is likely, we hear, to come under the supervision of the University Court. As one of the seven members of that Court, Dr. Brown, we are afraid, is not in a fit position to sit in judgment on the matter. We feel assured that the very high-minded and honorable Rector of the University will look upon this strange episode in modern university teaching with characteristic regret and disdain.—*Med. Times and Gazette*, from the *Edinburgh Daily Review*.

The Death of Dr. Coale.—At the meeting of the Medical Improvement Society, on Monday evening, the following resolutions were presented by Dr. Ware, and unanimously adopted:—

Resolved, That in the death of Dr. Wm. Edward Coale the Boston Society for Medical Improvement has lost one of its most valued and respected members.

Resolved, That his social and genial nature endeared him as a com-

panion to every one brought within its influence. That his generous self-forgetfulness and devotion bound him as a friend who could be relied upon under all circumstances. That the same active industry and ambition of self-improvement which made him an accomplished man in his profession, also made him a zealous supporter of everything conducive to its honor and welfare. That we mourn the loss of one who filled well the place in which he had chosen to labor for the benefit of his fellowmen, and who had employed to the best advantage the powers with which Providence had endowed him for his task.

Resolved, That while we offer our heartfelt sympathy to the afflicted family which has thus been deprived of a beloved member, we feel well assured that the memory of a life so faithful to all its duties will soften the pang which such a bereavement must bring.

Quinquecentenary Jubilee of the University of Vienna.—This University was founded on the 12th of March, 1365, and great preparations are now making to celebrate the five hundredth anniversary. Dr. Sigmund, in a letter to the *Imparziale*, states that October will probably be chosen for the festivities, in order to allow medical men from all parts to be present. It is stated in the same letter that the most liberal new regulations have been introduced into the Faculty of Medicine, and that the beds in the different hospitals of Vienna are now no less than 4000.—*London Lancet.*

Charitable Bequest in Warsaw.—Dr. Rouczwicz has just died at Warsaw, leaving a sum of 310,000 Polish florins for philanthropic works, of which 150,000 are to be laid out in the purchase of a plot of ground for the Medical Society. An annual sum has also been set apart for two students.—*Ibid.*

VITAL STATISTICS OF BOSTON.

For the Week ending Saturday, May 6th, 1865.

DEATHS.

	Males.	*Females.*	*Total.*
Deaths during the week - - - - - - -	36	37	73
Ave. mortality of corresponding weeks for ten years, 1853—1863,	39.3	37.5	76.8
Average corrected to increased population - - - - -	00	00	84.02
Death of persons above 90 - - - - - - - -	0	0	0

Books and Pamphlets Received.—The Essentials of Materia Medica and Therapeutics. By Alfred Baring Garrod, M.D., F.R.S., &c. New York: Wm. Wood & Co.—Physician's Prescription Book, &c., for the use of Medical and Pharmaceutical Students. By Jonathan Pereira, M.D., F.R.S. Fourteenth Edition. Philadelphia: Lindsay & Blakiston.—Hand-Book of Skin Diseases, for Students and Practitioners. By Thomas Hillier, M.D. Lond., Member of the Royal College of Physicians, &c. Philadelphia: Blanchard & Lea.—Our thanks are due to Dr. G. F. Winslow, Assist. Surg. U.S.N., on board the U. S. Steamer Osceola, for a copy of the "Confederate States Medical and Surgical Journal," Vol. I., No. 3, dated Richmond, March, 1864, found at Fort Fisher after its capture by our forces in January last.

Deaths in Boston for the week ending Saturday noon, May 6th, 73. Males, 36—Females, 37. Accident, 1—aneurism. 1—apoplexy, 1—congestion of the brain, 1—bronchitis, 1—cancer, 1—convulsions, 4—consumption, 20—croup, 3—diarrhœa, 1—diphtheria, 1—dropsy, 2—dropsy of the brain, 2—epilepsy, 1—scarlet fever, 3—typhoid fever, 2—disease of the heart, 4—infantile disease, 2—intemperance, 1—marasmus, 1—neuralgia, 1—peritonitis, 1—pleurisy, 1—puerperal disease, 2—smallpox, 4—tumor, 1—stricture of urethra, 1—unknown, 9.

Under 5 years of age, 23—between 5 and 20 years, 7—between 20 and 40 years, 24—between 40 and 60 years, 9—above 60 years, 10. Born in the United States, 50—Ireland, 15—other places, 8.